



2/18

Fig.2.

Cla 1

TATGGATTGACATCGATAATACGACTACTATAGGGATTCTTTTTTTCTTTTGNTTTTAAAAAAGTTGAACATGCAATTAGTTGCGTCAGTTCTCACACTCTCTCTAACTTCTC
ATACCTAACTGTAGCTATTATGCTGAGTGATATCCCTAAAGAAAAAAGAAAAACNAAAAATTTTTTCAACTTGTACGTTAATCAACGCAGTCAGAGTGTGAGACAGATTGAAGAG 120

M O L V A S V L T L S L T S

Nco I

AGCGAAATGGGACACTACACCATATCAGGAATACGTTTTCTTGCTCCACTCCGCAAAATCTCAATCTACCGGGTTCATGGTGATCGAAGGACCTCCTTTGCCCTTCTTCAACTTC
TCGCTTTACCTCTGTGATGTGGTATAGTCCCTATGCAAAGGAACACGAGGTGAGCGGTTTAGAGTTAGATGCGCGAAGGTACCACTAGCTTCTGGAGGAGAACGGAAGGAAGTTGAAG 240
Q R N G T L H H I R N T F S L C S T P Q I S I Y R L P W
H G H Y T I S G I R F P C A P L R K S O S T G F H G D R R T S S C L S F N F

AAGAAGGCGCGGTTTTCTAGGAGGGTCTTCTCGAAAGTCATCTCATGAATCTGACTCTCAAATGTAATGGTCACTGCGCTCAAAGAGTCTCTCTGATGGTGGGATTGAATGCTAT
 TTCTTCGCGCGCAAAAGATCTCTCCAGAAGAGACTTTTCAGTAGAGTACTTAGACTGAGGAGTTTACATTACCAGTGACCGCAGATTTTCTCAGGAAGGACTACCAGCTTAACCTACGATA 360
 K K A A F S R R V F S G K S S H E S D S S N V M V T A S K R V L P D G R I E C Y
 TCTTCTCAACAGATCAATTGGAAGCCCTGGCAGCTTTCAGAAGAATCCAGGTGCTTACTGATGTCAGAGTCTCATTATGGATGATAAGATTGTTGAAGATCAAGTAATAAAGAA
 AGAAGAAGTTGTCTAGTTAACTTCGGGGACCGTGCAAAAGTCTTCTTAGGGTCCACGAATGACTACAACTCTCAGAGTAATACTCTACTATTCTAACAACTTCTACTTCTATTATTTCTT 480
 S S S T D O L E A P G T V S E E S O V L T D V E S L I M D D K I V E D E V N K F

Xmpn 1

Hind III

TCTGTTCCAATGCGGGAGACAGTTAGCATCGGAAAAATGGATCTAAACCAAGGTCCATTCTCCACCCGGCAGAGGCAAGAATATATGACATAGATCCAAGGTTGACAGGCTTTCGT
 AGACAAGGTTACGCCCTCTGTCATCGTAGCCCTTTTAACTAGATTGGTTCAGGTAAGGAGGTGGGCGCTCTCCGGTTCTTATATACGTGATCTAGGTTGCAACTGTCCGAAAGCA 600
 S V P M R E T V S I G K I G S K P R S I P P P G R G R I Y D I D P S L T G F R

Hinc II

Nsi I

CAACACCTAGATTACCGGTATTCACAGTACAAAGACTCCGAGAAGAAATTGACAAGTATGAAGGTAGTCTGGATGCAATTTCTCGTGGCTATGAAAAGTTGGTTTCTCACGCAGTGAA
GTTGTGGATCTAATGGCCATAAGTGTCTGTTTTCTGAGGCTCTTCTTAACTGTTCTACTTCCATCAGACCTACGTAAGAAGACGACCGATCTTTCAAACCAAGAGTGGCGTCACTT 720
D H L D Y R Y S O Y K R L R E E I D K Y E G S L D A F S R G Y E K F G F S R S E

Bq1 11

ACAGGAATAACTTATAGAGAGTGGCCACAGGAGCTACGTGGGCTGCATTGATTGGAGATTTCAATAACTGGAATCTAATGCAGATGTCATGACTCAGAATGAGTGTGGTGTCTGGGAG
TGTCCTATTGAATATCTCTACCCGTGGTCTCGATGCACCCGACGTAACTAACCTCTAAAGTTATTGACCTTAGGATTACGCTACAGACTGAGTCTTACTCACACACAGACCTC 840
T G I T Y R E W A P G A T W A A L I G D F N N W N P N A D V M T O N E C G V W E

Nco I Xho I

ATCTTTTGGCGAATAATGCAGATGGTTCACACCAATTCCCATGTTCTCGAGTAAGATACGCATGGATACCTCATCTGGCAACAAAGATTCTATTCTCGTTGGATCAAGTTCTCA
TAGAAAAACGGCTTATTACGCTACCAAGTGGTGGTAAGGGGTACCAAGAGCTCATTTCTATCGGTACCTATGAGGTAGACCGTGTGTTCTAAGATAAGGACGAACCTAGTTCAAGAGT 960
I F L P N N A D G S P P I P H G S R V K I R M D T P S G N K D S I P A W I K F S

GTTC AAGCACCAGGTGAAC TCCATATAATGGCATATACTATGATCTCTCCGAGGAGGAGAAGTATGTGTTCAA AAAATCTCTAGC CAAAGAGACCAA AAAATCACTTCGGATTATGAGTCG
CAAGTTCGTGCTCACTTGAGGGTATATTACG TATATGATACTAGGAGGGCTCTCTCTTCATACACAAGT TTTTAGGAGTCGGTTCTCTGGT TTTTAGTGAAGCTAAATCACTCAGC
V Q A P G E L P Y N G I Y Y D P P E E E K Y V F K N P Q P K R P K S L R I Y E S 1080

Nde i

Hind III

CACGTTGGAATGAGTAGTACGGAGCCACTAATTAAACACATATGCCAACTTTAGAGATGATGTCCTCTCGCATCAAAAAGCTTGGCTACAATGCTGTTACAGCTCATGGCTATTCAAGAG
 GTGCAACCTTACTCATCATGCCCTGGTCAATTAATTGTATACGGTTGAAATCTCTACTACAGGAAGGAGCGTAGTTTTCTGAACCGATGTTACGACAAGTCGAGTACCGGATAAGTCTCTC
 HVGMSSSTEPVINTYANFRDDVLPRIKXKLGYNNAVOLMAIOE

CATT CATATT ATGCTAGT TTTGGG TATCAC GTCA CAACTTT ATGCAG CTAGCAG CCGATT TGGAA CTCTG ATGATT TAAAGT CCTAGT AGATAA AAGCTC ACAGAG TTAGGT CTCTTT
 GTAAGTATAATACGATCAAAACCCATAGTGCAGTGTTGAAAATACGTCATCGTCGGCTAAACCTTGAGGACTACTAAATTTGAGGATCATCTATTTCAGTGCTCAATCCAGAAGAA 1320
 H S Y Y A S F G Y H V T N F Y A A S S R F G T P D D L K S L V D K A H E L G L L

Nsi 4

GTTCATCGGATATTGTTTCATAGCCATGCATCAACTAATACGTTGGATGGCGTGAATATGTTTGATGGTACGGATGGTCACTACTTTCACCTCGGACCACGGGGTCATCATTGGATGTGG
CAAGAGTACCTATAACAAGTATCGGTACGTAGTGTGATTATGCAACCTACCCGACTTATACAACTACCATGCTACCAGTGATGAAAGTGAGACCTGGTCCCCAGTAGTAACCTACACC 1440
V L M D I V H S H A S T N T L D G L N M F D G T D G H Y F H S G P R G H H W M W

GACTCTCGCCTTTTCAACTATGGGAGCTGGGAGGTTCTAAGGTTCTTCTTTCAAATACAAGGTGGTGGTGGATGAGTACAAGTTTGATGGGTTGAGATTGATGGGGTGACTTCAATG
 CTGAGAGCGGAAAAGTTGATACCTCGACCTCCCAAGATTCCAAGAAGAAAGTTTATGTTCCACCACCAACCTACTCATGTTCACAACTACCCAAGTCTAAACTACCCCACTGAAGTTAC 1560
 D S R L F N Y G S W E V L R F L L S N T R W . W L D E Y K F D G F R F D G V T S M

Fig.2 (Cont).

ATGTACACCCATCATGGATTGCAGGTAGATTTCACCGGCAACTACAATGAATACTTTGGATATGCAACTGATGTAGACTGCTGTGGTTTATCTGAGCTGTTGAATGATATGATTCATGGT
TACATGTGGGTAGTACCTAACGTCCTATCTAAAGTGCCGTTGATGTTACTTATGAACCTATACGTTGACTACATCTCAGCACACCAATAAGACTACGACAACTACTATACTAAGTACCA 1680
M Y T H H G L O V D F T G N Y N E Y F G Y A T D V D A V V Y L M L L N D M I H G

CTCTTCCCAGAGGCTGTCAACATTGGTGAAGATGTTAGTGAATGCCAACAGTTTGCATTCCGGTTGAAGATGGTGGTGTGGCTTTGATTATCGTCTCCACATGGCTGTGCTGATAAA
GAGAAGGGTCTCCGACAGTGGTAACCACTTCTACAATACCTTACGGTGTGCAACGTAAGGCCAACTTCTACCCACACAACCGAACTAATAGCAGAGGGTGATCCGACACAGCACTATT 1800
L F P E A V T I G E D V S G H P T V C I P V E D G G V G F D Y R L H M A V A D K

Nde I

TGGGTTGAGATTATTCAGAAGAGAGATGAAGATTGAAAAATGGGTGACATTGTACATATGCTGACCAACAGGCGGTGGTTGGAAAGTGTGTTTCTTATGCTGAAAGTCATGACCAGGCC
 ACCCAACTCTAATAAGTCTTCTCTACTTCTAACCTTTTACCACGTGAACATGTATACGACTGGTGTGCGGCACCAACCTTTTACACAAAGAATACGACTTTTCAGTACTGGTCCGG 1920
 W V E I I Q K R D E D W K H G D I V H M L T N R R W L E K C V S Y A E S H D O A

CTGTGTTGGTGACAAAACATTGCACTTTTGGCTGATGGACAAGGATATGTATGACTTCATGGCTCGTGACAGACCATCTACTCCTCTTATAGATCGTGGAAATAGCAATTGCACAAAATGATC
GAACAACCACTGTTTGTGATAACGTAACACGACTACTCGTTTCTATACATACTGAAGTACCGAGCACTGCTCGTAGATAGGAGCAATATCTGACACCTTATCGTAACGTTTGTACTAG 2040
L V G D K T I A F W L M D K D H Y D F M A R O R P S T P L I D R G I A L H K M I

Nco I

AGGCTTTATTACCATGGGCTTAGCGGGAGAAGGATATTTGAATTTTATGGGAATGAATTTGGACATCTGAGTGGATTGATTTTCCACAGAGGGGATGCACATCTGCCCAATGGTAAAGTA
TCCGAATAATGGTACCGGAATCCGGCTCTTCTATAAAGTTAAATACCTTTACTTAAACCTGTAGGACTCACCTAACTAAAAGTTCTCCCTAGCTGTAGACGGGTACCATTTCAT 2160
R L I T M G L G G E G Y L N F M G N E F G H P E W I D F P R G D R H I P N G K V

EcoR V

ATTCACGGGAACAACCACAGTTATGATAAATGCCGTCGTAGATTTGATCTAGGTGATGCACACTCTAAGATATCATGGAATGCAAGAGTTTGATCAGGCAATGCAACACTCTTGAAGAA
TAAGGTCCTTGTGGTGTCATACTATTTACGGCAGCATCTAAACTAGATCCACTACGTCCTGATAGATTCTATAGTACCTTACGTTCTCAAACTAGTCGGTTCAGTTGTAGAAGTCTCTT 2280
I P G N N H S Y D K C R R R F D L G D A D Y L R Y H G M Q E F D Q A M Q H L E E

GCCTATGGTTTCATGACTTCTGAGCACCAGTATATATACGGAAGGATGAAGGAGATCGGATCATTGCTTTGAGAGGGGAAACCTGTTTGTATTCAACTTTCATTGGACTAACAGC
CGGATACCAAAGTACTGAAGACTCGTGGTCATATATAGTGCCCTCTCTACTCTCTAGCCTAGTAACAGAACTCTCCCTTTGGAACAAAAATAAGTGAAGTAACCTGATTGTGC 2400
A Y G F M T S E H O Y I S R K D E G D R I I V F E R G N L V F V F N F H W T N S

TATTTCAGATTACCCGAGTTGGCTGCTTCAAGTCAGGAAAGTACAAGATTGTTTGGACTCGGATGATGCGCTTGTTTGGAGGCTTCAACAGGCTTAGTCATGATGCCGAGCACTTCACCTTT
 ATAAGTCTAATGGCTCAACCGACGAAGTTCAAGTCTTTCATGTTCTAACAAAACCTGAGCTTACTACCGAACAAACCTCGAAGTGTGCGAATCAGTACTACGGCTCTGGAAGTGGAAA
 Y S D Y R V G C F K S G K Y K I V L D S D D G L F G G F N R L S H D A E H F T F

GACGGTGGTATGATAACCGGCCCTCGGTCTTATGGTATATGCACCATCTAGGACAGCAGTGGTCCATGCTTTAGTAGAAGATGAAGAGAATGAACAGAGAATGAAGTAGAAAGTGAA
 CTGCCCACTACTATTGGCCGGAGCCAGGAAGTACCATATACGTGGTAGATCTCTGTCGCCAGGTACGAAATCATCTTCTACTTCTTACTTCTGCTTCTACTTCATCTTCTACTT
 D G W Y D N R P R S F H V Y A P S R T A V V H A L V E D E E N E A E N E V E S F

BamH I

King II

GTGAACACCGCCTCCGGCTGAGATAGATATTTAGTAGAGGATCCCTAAAGCAGGAATGGTTAACCTGTGCATCTGCATTGAACACGATATATTGAGACTTGAATTGATTGCTGCTCA 2760
CACTTTGTGTCGGAGGCCGACTCTATCTATAAATCATTCTCTAGGGGATTTGTCCTTACCAATTGGACACGTAGACGTAACCTGCTGCATATAACTCTGAACCTAACTAAACGACGAGT
V K P A S G

Ssp I

Nsi I

Nde I

GGACACAGAATATTAATTCCAAGGCTCAAGCGAGAGATACACGCCAATATGCATGATCATATGAAAGCTCCCAACTTGTAATCATTTAGCAAGCTGCGTGCACCTCTGTAATTATATG
CCTGTGCTTATAAATAAGGTTCCGAGTTCGGTCTCTATGTGCGGTATTACGTACTAGTATACATTTTCAGAGGGTTGAACATTAGTAAAATCGTTTCAGCCGCTGAGACATTTAATATAC 2880

Sca i

Nco I

TAGTACTTTGGCAAGTCACGTTATTATGGATACCATGGATGTCGCTAGGAAAAATTTTGTTATACGCCCTACTAGGATTTTTAAATCTCGCATGTTCCACATAAAGTGGTGGTTGAATG
ATCATGAACCGTTTCAAGTCAATAATACCTTATGGTACCTACAGCGATCTCTTTTAAACACATATGCGGATGATCTAAAAATTTACAGCGTACAAGGTGTTATTCACCACTTAC 3000

Xmn 1

TTGGCGACTATTTTGGAGTAAATGATTGAAGTTATCTTCACTGGGCCTGTGAAAAAAAAAAAAAAAAAAAA
AACGCGCTGATAAAACCTATTTACTAACTTCAATAAGAAGTGAACCGGACACTTTTTTTTTTTTTTTTTT 3074

[illegible]

Fig.3.

Fig. 3.

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Fig.4.

CTCTCTAACTTCTCAGCGAAATGGGACATACACCATATCAGGAATACGTTTCTTGTGCTCCACTCTGCAAACTCAATCTACCGGCTTCCATGGCTATCGGAGGACCTCCTCTTGCC
GAGAGATTGAAGATCTCGCTTACCTCTGTATGTGTATAGTCTTATGCAAAAGGAACACGAGGTGAGAGCTTACAGTTAGATGGCCGAAGGTACCGATAGCCTCCTGGAGGAGAACGG 120

M G H Y T I S G I R F P C A P L C K S O S T G F H G Y R R T S S C

TTTCTTCAACTTCAAGGAGGCGTTTCTAGGAGGCTTCTCTGAAAGTCATCTCAATCTGACTCCTCAATGTAATGGTCACTGCTTCTAAAAGAGTCTTCTGATGGTCGGA 240
AAAGGAAGTTGAAGTTCTCCGCAAAAGATCTCCGAGAAGAGACCTTTCAGTAGAGTACTTAGACTGAGGAGTTTACATTACCACTGACGAAGATTTCTCAGGAAGGACTACCAAGCT

L S F N F K E A F S R R V F S G K S S H E S D S S N V M V T A S K R V L P D G R

TTGAATGCTATTCTTCTTCAACAGATCAATTGGAAGCCCTGGCACAGTTCAGAGAATCCAGGTGCTTACTGATGTTGAGAGTCTCATTATGGATGATAAGATTGTTGAAGATGAAG 360
AACTTACGATAAGAAGAAGTTGCTAGTTAACCCTCGGGACCGTGTCAAAGTCTTCTAGGGTCCACGAATGACTACAACCTCAGAGTAATACCTACTATTCTAACAACCTTCTACTTC

I E C Y S S S T D O L E A P G T V S E E S Q V L T D V E S L I H D D K I V E D E

Xmn I Hind III

TAAATAAGAATCTGTTCCAATGCCGAGACAGTTAGCATCAGAAAAATGGATCTAAACCAGGTCCATTCTCCACCCGGCAGAGGCAAGAATATATGACATAGATCCAAGCTTGA 480
ATTTATTTCTTAGACAAGGTACGCCCTCTGTCAATCGTAGCTTTTTTAACCTAGATTTGGTTCAGGTAAGGAGGTGGGCCGCTCTCCGTTTCTATATACCTGATATCTAGGTTTCAAGCT

V N K E S V P M R E T V S I R K I G S K P R S I P P P G R G D R I Y D I D P S L

Hinc II Nsi I

CAGGCTTTCTGCAACACCTAGATTACCGGTATTCACAGTACAAAAGACTCCGAGAAGAAATGACAAGTATGAAGTAGTCTGGATGCAATTTCTCGTGGCTATGAAAAGTTTGGTTTCT 600
GTCCGAAAGCAGTTGTGATCTAATGGCCATAAGTGTCTGTTTCTGAGGCTCTCTTAACTGTTTCACTTCCATCAGACCTACGTAAGAGACCCGATCTTTTCAAACCAAGA

T G F R O H L D Y R Y S O Y K R L R E E I D K Y E G S L D A F S R G Y E K F G F

CACGCAGTGAACAGGAATAACTTATAGAGAGTGGGACCAGGAGCTACGTGGGCTGCATTGATTGGAGATTTCAATAACGGAATCCTAATGCAGATGTCATGACTCAGAATGAGTGTG 720
GTGGCTCACTTTGTCTTATTGAATATCTCTACCCGTTGGTCTCGATGCAACCGACGTAACCTAACCCTAAAGTTATTGACCTTAGGATTACGCTTACAGTACTGAGTCTTACTCACAC

S R S E T G I T Y R E W A P C A T W A A L I G D F N N W N P N A D V M T O N E C

Bgl II Nco I Xho I

GTGCTGGGAGATCTTTTGGCGAATAATGCAGATGGTTCCACCACCAATTCCTCATGGTTCGAGTAAGATACGCATGGATCTCCATCTGGCAACAAGATTCTATTCCTGCTTGA 840
CACAGACCTCTAGAAAAACGGCTTATTACGCTTACCAAGTGGTGGTTAAGGGGTACCAAGAGCTCATTTCTATGCGTACCTATGAGGTAGACCGTGTCTTCTAAGATAAGGACGAACCT

G V W E I F L P N N A D G S P P I P H G S R V K I R M D T P S G N K D S I P A W

TCAAGTCTCAGTTCAAGCACCAGGTGAACCTCCATATAATGGCATATACTATGATCTCTCCGAGGAGGAGAAGTATGTTTCAAAAATCTCAGCCAAAGAGACCAAAATCACTTCGGA 960
AGTTCAAGAGTCAAGTTCTGGTCCACTTGAGGGTATATTACCGTATATGATACTAGGAGGGCTCCTCTCTTACACAAGTTTTAGGAGTGGTTTTCTCTGGTTTTAGTGAAGCTT

I K F S V Q A P G E L P Y N G I Y Y D P P E E E K Y V F K N P O P K R P K S L R

Hind III

TTTATGAGTGGCAGCTTGGATGAGTAGTACGGAGCCAGTAATTAACACATATGCCAATTTAGAGATGATGCTTCTCGCATCAAAAAGCTTGGCTACAATGCTGTTCACTCATGG 1080
AAATACTCAGCGTGCAACCTTACTCATGCTCGCTCATTAAATGTGTATACGGTGAAATCTCTACTACGAAGGAGCGTAGTTTTTGAACCGATGTTACGACAAGTCGAGTACC

I Y E S H V G M S S T E P V I N T Y A N F R D D V L P R I K K L G Y N A V O L M

CTATTCAAGAGCATTCATATTATGCTAGTTTGGGTATCAGTCAACAATTTTATGACGCTAGCAGCCGATTTGGAACCTCTGATGATTTAAAGTCTCTAATAGATAAAGCTCAGAGT 1200
GATAAGTTCTCGTAAGTATAATACGATCAAAACCATAGTGCAGTGTTTGAATAACGTCGATCGGCTAAACCTTGAGGACTACTAAATTCAGAGATTATCTATTTCGAGTGCTCA

A I Q E H S Y Y A S F G Y H V T N F Y A A S S R F G T P D D L K S L I D K A H E

Nsi I

TAGGTCTTCTTGTCTCATGGATATTGTTTATAGCCATGCATCAACTAATACGTTGGATGGGCTGAATATGTTTGGTACGGATGGTCACTACTTCTCACTCTGGACCACGGGGTCATC 1320
ATCCAGAAGAACAGAGTACCTATAACAAGTATCGGTACGTAGTGATTGCAACCTACCCGACTTATCAAACTACCATGCCTACCACTGATGAAGGTGAGACCTGGTGGCCCACTAG

L G L L V L M D I V H S H A S T N T L D G L N M F D G T D G H Y F H S G P R G H

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Fig.4 (Cont).

ATTGGATGTGGGACTCTCGCCTTTTCAACTATGGGAGCTGGGAGGTTCTAAGGTTTCTCTTTCAAATGCAAGGTGGTGGTGGATGAGTACAAGTTGATGGGTTGAGATTGATGGG 1440
TAACCTACACCTGAGAGCGGAAAGTTGATACCTCGACCTCCAAGATTCCAAAGAAGAAAGTTACGTTCCACCACCAACCTACTCATGTTCAAACACCCAAGTCTAACTACCCC
H W H W D S R L F N Y G S W E V L R F L L S N A R W W L D E Y K F D G F R F D G
TGACTTCAATGATGTACACCATCATGGATTGCAGGTAGATTTACCGGCAACTACAATGAATACTTTGGATATGCAACTGATGTAGATGCTGTGGTTTATTTGATGCTGTGAATGATA 1560
ACTGAAGTTACTACATGTGGGTAGTACCTAACGTCCATCTAAATGGCCGTGATGTTACTTATGAAACCTATACGTTGACTACATCTACGACACCAATAAACTACGACAACCTACTAT
V T S M H Y T H H G L O V D F T G N Y N E Y F G Y A T D V D A V V Y L M L L N D
TGATTGATGGTCTCTCCAGAGGCTGTCAACATTGGTGAAGATGTTAGTGAATGCCAACAGTTTGATTCCGGTTGAAGATGGTGGTGGTGGCTTTGATTATCGTCTCCACATGGCTG 1680
ACTAAGTACCAGAGAAGGCTCCGACAGTGGTAACCACTTCTACAATCACCTTACGGTTGTCAAACGTAAGGCCAAGTTCTACCACCAACCGAACTAATAGCAGAGGTGTACCGAC
H I H G L F P E A V T I G E D V S G M P T V C I P V E D G G V G F D Y R L H H A
TTGCTGATAAATGGGTTGAGATTATTCAGAAGAGAGATGAAGATTGGAAAAATGGGTGACATTGTACATATGCTGACCAACAGGCGGTGGTTGAAAAAGTGTGTTCTTATGCTGAAAGTC 1800
AAGCACTATTACCAACTCTAATAAGTCTTCTCTACTTCTAACCCTTTACCCACTGTAACTGTATACGACTGGTGTCCGCCACCAACCTTTTCACACAAAGAATACGACTTTCAG
V A D K W V E I I O K R D E D W K M G D I V H M L T N R R W L E K C V S Y A E S
ATGACCAAGGCTTGTGGTGACAAAACCTATGCAATTTGGCTGATGGACAAGGATATGATGACTTCATGGCTCTTGACAGACCATCTACTCTCTCATAGATCGTGGAGTAGCATTGC 1920
TACTGGTCCGGGAACCAACTGTTTTGATAACGTAAACCGACTACCTGTTCTCTATACATACTGAAGTACCGAGAAGCTGTCTGGTAGATGAGGAGAGTATCTAGCACCTCATCGTAACG
H D D A L V G D K T I A F W L M D K D H Y D F H A L D R P S T P L I D R G V A L
Bcl I Nco I
ACAAAATGATCAGGCTTATTACCATGGGATTAGCGGAGAGGATATTTGAATTTTATGGAAATGAATTTGGACACCCGAGTGGATTGATTTTCAAGAGGTGATCTACATCTTCCCA 2040
TGTTTTACTAGTCCGAATAATGGTACCCTAATCCGCCTCTTCTCTATAAATCTAAATACCTTTACTTAAACCTGTGGGCTCACCTAACTAAAAGGTTCTCCACTAGATGTAGAAGGT
H K H I R L I T M G L G G E G Y L N F M G N E F G H P E W I D F P R G D L H L P
EcoR V Bcl I
GTGGTAAATTTGTTCTGGGAACAATTACAGTTATGATAAATGCCGGCTAGGTTTGATCTAGGCAATTCAAAGCATCTGAGATATCATGGAATGCAAGAGTTTGTATCAAGCAATTCAGC 2160
CACCATTAAACAAGGACCTTGTTAATGTCAATACTATTTACGGCCGATCCAACTAGATCCGTTAAGTTTCGTAGACTCTATAGTACCTACGTTCTCAAACTAGTTCGTTAAGTCG
S G K F V P G N N Y S Y D K C R R R F D L G N S K H L R Y H G M O E F D O A I O
ATCTTGAAGAAGCCTATGGTTTATGACTTCTGAGCACAATACATATCACGGAAGGATGAAAGGATCGGATCATTGTCTTCGAGAGGGGAAACCTCGTTTTGTATTCAATTTTCATT 2280
TAGAACTTCTTCGGATACCAAGTACTGAAGACTCGTGGTTATGTATAGTGCCTTCTACTTTCCCTAGCTAGTAACAGAAGCTCTCCCTTTGGAGCAAAAACATAAGTTAAAGTAA
H L E E A Y G F M T S E H O Y I S R K D E R D R I I V F E R G N L V F V F N F H
GGACTAGCAGCTATTCGGATTACCGAGTTGGCTGCTTAAAGCCAGGAAAGTACAAGATAGTCTTGGATTGAGATGATCCTTTGTTGGAGGCTTTGGCAGGCTTAGTCATGATGCAGAGC 2400
CCTGATCGTGAAGAAGCTAATGGCTCAACCGACGAATTTCCGGTCTTTTATGTTCTATCAGAACCTAAGTCTACTAGGAAACAAACCTCCGAAACCGTCCGAATCAGTACTACGCTCG
W T S S Y S D Y R V G C L K P G K Y K I V L D S D D P L F G G F G R L S H D A E
ACTTCAGCTTTGAAGGGTGTACGATAACCGGCTCGATCCTTCATGGTGTACACACCATGTAGAACAGCAGTGGTCTATGCTTTAGTGGAGGATGAAGTGGAGAATGAATTTGGAACCTG 2520
TGAAGTCGAAACTTCCCACTATGCTATTGGCCGAGCTAGGAAGTACCACATGTGTGGTACATCTTGTCTGACCAGATACGAAATCACTCTCTACTTCACTTCACTTAACTTTGGAC
H F S F E G W Y D N R P R S F M V Y T P C R T A V V Y A L V E D E V E N E L E P
TCGCCGTTAAGATATATCTTAAACAGGTTCTGAAGCAGGAATGCCATTATTGATCTTCTATGTT 2588
AGCGGCCAATTCATATAGAATTGTTGTGCAAGACTTCGTCCTTACGGTAATACTAGAGGATACAA
V A G

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Fig.5.

125+94. seq	60	70	80	90	100	110	120
116. seq	1140	1150	1160	1170	1180	1190	1200
125+94. seq	130	140	150	160	170	180	190
116. seq	1210	1220	1230	1240	1250	1260	1270
125+94. seq	200	210	220	230	240	250	260
116. seq	1280	1290	1300	1310	1320	1330	1340
125+94. seq	270	280	290	300	310	320	330
116. seq	1350	1360	1370	1380	1390	1400	1410
125+94. seq	340	350	360	370	380	390	400
116. seq	1420	1430	1440	1450	1460	1470	1480
125+94. seq	410	420	430	440	450	460	470
116. seq	1490	1500	1510	1520	1530	1540	1550
125+94. seq	480	490	500	510	520	530	540
116. seq	1560	1570	1580	1590	1600	1610	1620
125+94. seq	550	560	570	580	590	600	610
116. seq	1630	1640	1650	1660	1670	1680	1690
125+94. seq	620	630	640	650	660	670	680
116. seq	1700	1710	1720	1730	1740	1750	1760
125+94. seq	690	700	710	720	730	740	750
116. seq	1770	1780	1790	1800	1810	1820	1830
125+94. seq	760	770	780	790	800	810	820
116. seq	1840	1850	1860	1870	1880	1890	1900
125+94. seq	830	840	850	860	870	880	890
116. seq	1910	1920	1930	1940	1950	1960	1970
125+94. seq	900	910	920	930	940	950	960
116. seq	1980	1990	2000	2010	2020	2030	2040

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Fig.5 (Cont).

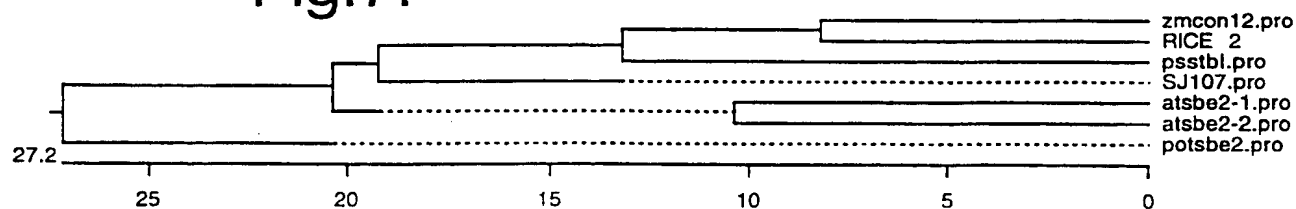
125+94. seq ¶970 ¶980 ¶990 ¶1000 ¶1010 ¶1020 ¶1030
 CCAAGAGGGGATCGACATCTGCCCAATGGTAAAGTAATTCCAGGGAACAACCACAGTTATGATAAATGCC
 116. seq CCAAGAGG GATC ACATCT CCA TGGTAAA T TTCC GGGAACAA ACAGTTATGATAAATGCC
 CCAAGAGGTGATCTACATCTTCCAGTGGTAAATTTGTTCTGGGAACAATTACAGTTATGATAAATGCC
 ¶2050 ¶2060 ¶2070 ¶2080 ¶2090 ¶2100 ¶2110
 125+94. seq ¶1040 ¶1050 ¶1060 ¶1070 ¶1080 ¶1090 ¶1100
 GTCGTAGATTTGATCTAGGTGATGCAGACTATCTAAGATATCATGGAATGCAAGAGTTTGATCAGGCAAT
 G CGTAG TTTGATCTAGG AT CA A ATCT AGATATCATGGAATGCAAGAGTTTGATCA GCAAT
 116. seq GCGTAGGTTTGATCTAGGCAATTCAAAGCATCTGAGATATCATGGAATGCAAGAGTTTGATCAAGCAAT
 ¶2120 ¶2130 ¶2140 ¶2150 ¶2160 ¶2170 ¶2180
 125+94. seq ¶1110 ¶1120 ¶1130 ¶1140 ¶1150 ¶1160 ¶1170
 GCAACATCTTGAAGAAGCCTATGGTTTTCATGACTTCTGAGCACCAGTATATACACGGAAGGATGAAGGA
 CA CATCTTGAAGAAGCCTATGGTTTTCATGACTTCTGAGCACCA TA ATATCACGGAAGGATGAA G
 116. seq TCAGCATCTTGAAGAAGCCTATGGTTTTCATGACTTCTGAGCACCAATACATACGGAAGGATGAAAGG
 ¶2190 ¶2200 ¶2210 ¶2220 ¶2230 ¶2240 ¶2250
 125+94. seq ¶1180 ¶1190 ¶1200 ¶1210 ¶1220 ¶1230 ¶1240
 GATCGGATCATTGTCTTTGAGAGGGGAAACCTTGTTTTGTATTCAACTTTTCATTGGACTAACAGCTATT
 GATCGGATCATTGTCTT GAGAGGGGAAACCT GTTTTTGTATTCAA TTTTCATTGGACTA CAGCTATT
 116. seq GATCGGATCATTGTCTTCGAGAGGGGAAACCTCGTTTTGTATTCAATTTTCATTGGACTAGCAGCTATT
 ¶2260 ¶2270 ¶2280 ¶2290 ¶2300 ¶2310 ¶2320
 125+94. seq ¶1250 ¶1260 ¶1270 ¶1280 ¶1290 ¶1300 ¶1310
 CAGATTACCGAGTTGGCTGCTTCAAGTCAGGAAAGTACAAGATTGTTTTGGACTCGGATGATGGCTTGTT
 C GATTACCGAGTTGGCTGCTT AAG CAGGAAAGTACAAGAT GT TTGA TC GATGAT TTGTT
 116. seq CGGATTACCGAGTTGGCTGCTTAAAGCCAGGAAAGTACAAGATAGTCTTGGATTTCAGATGATCCTTTGTT
 ¶2330 ¶2340 ¶2350 ¶2360 ¶2370 ¶2380 ¶2390
 125+94. seq ¶1320 ¶1330 ¶1340 ¶1350 ¶1360 ¶1370 ¶1380
 TGGAGGCTTCAACAGGCTTAGTCATGATGCCGAGCACTTCACCTTTGACGGGTGGTATGATAACCGGCCT
 TGGAGGCTT CAGGCTTAGTCATGATGC GAGCACTTCA CTTTGA GGGTGGTA GATAACCGGCCT
 116. seq TGGAGGCTTTGGCAGGCTTAGTCATGATGCAGAGCACTTCAGCTTTGAAGGGTGGTACGATAACCGGCCT
 ¶2400 ¶2410 ¶2420 ¶2430 ¶2440 ¶2450 ¶2460
 125+94. seq ¶1390 ¶1400 ¶1410 ¶1420 ¶1430 ¶1440 ¶1450
 CGGTCCTTCATGGTATATGCACCATCTAGGACAGCAGTGGTCCATGCTTTAGTAGAAGATGAAG
 CG TCCTTCATGGT TA CACCAT TAG ACAGCAGTGGTC ATGCTTTAGT GA GATGAAG
 116. seq CGATCCTTCATGGTGTACACCATGTAGAACAGCAGTGGTCTATGCTTTAGTGGAGGATGAAG
 ¶2470 ¶2480 ¶2490 ¶2500 ¶2510 ¶2520 ¶2530

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Fig.6.

125-94. pro SFGYHVTNFFAPSSRFGTPDDLKSLIDKAHELGLLVLMDIVHSHASNNTLDGLNMFDDGTDSHYFHSGSRG
SFGYHVTNF: A: SSRFGTPDDLKSLIDKAHELGLLVLMDIVHSHAS. NTLDGLNMFDDGTD: HYFHSG: RG
116. pro SFGYHVTNFYAASSRFGTPDDLKSLIDKAHELGLLVLMDIVHSHASNNTLDGLNMFDDGTDGHYFHSGPRG
125-94. pro HHWLWDSRLFNYSWEVLRFLLSNARWWLEERYFDGFRFDGVTSMYTPHGLQVAFRTGNYNEYFGYATDV
HHW: WDSRLFNYSWEVLRFLLSNARWWL: EY: FDGFRFDGVTSMYT. HGLQV. FTGNYNEYFGYATDV
116. pro HHWWDSRLFNYSWEVLRFLLSNARWWLDEYKFDGFRFDGVTSMYTHHGLQVDFRTGNYNEYFGYATDV
125-94. pro DAVIYLMVLNDMIHGLFPEAVTIGEDVSGKPTFCIPVEDGGVGFDYRLHMAIADKWIEILKKRDEDWKMG
DAV: YLML: NDMIHGLFPEAVTIGEDVSG. PT CIPVEDGGVGFDYRLHMA: ADKW: EI: : KRDEDWKMG
116. pro DAVVYLMVLNDMIHGLFPEAVTIGEDVSGMPTVCIPVEDGGVGFDYRLHMAVADKWVEIIOKRDEDWKMG
125-94. pro DIVHTLTNRRWLEKCVAYAESHDQALVGDKTIAFWLMOKDMYDFMARDPSTPLIDRGIALHKMIRLITM
DIVH LTNRRWLEKCV: YAESHDQALVGDKTIAFWLMOKDMYDFMA DRPSTPLIDRG: ALHKMIRLITM
116. pro DIVHMLTNRRWLEKCVSYAESHDQALVGDKTIAFWLMOKDMYDFMALDRPSTPLIDRGVALHKMIRLITM
125-94. pro GLGGEGYLNFMGNEFGHPEWIDFPRGDRHLPNGKVI PGNNHSYDKCRRRFDLGDADYLRHYGMQEFDDQAM
GLGGEGYLNFMGNEFGHPEWIDFPRGD HLP: GK : PGNN. SYDKCRRRFDLG: : : LRYHGMQEFDDQ: :
116. pro GLGGEGYLNFMGNEFGHPEWIDFPRGDLHLPNGKVP GNNHSYDKCRRRFDLGNKHLRYHGMQEFDDQAI
125-94. pro QHLEEAYGFMTEHQYISRKDEGRDRIIVFERGNLVFVFNHWTNSYSDYRVGCFKSGKYKIVLDSDDGLF
QHLEEAYGFMTEHQYISRKDE DRIIVFERGNLVFVFNHWT: SYSDYRVG: K: GKYYKIVLDSDD LF
116. pro QHLEEAYGFMTEHQYISRKDERDRIIVFERGNLVFVFNHWTSSYSDYRVGCLKPKGYKIVLDSDDPLF
125-94. pro GGFNRLSHDAEHFTFDGWYDNRPRSFMYAPSRATVAVHALVEDEEENEAEVEVES
GGF: RLSDAEHF: F: GWYDNRPRSFMY: P: RTAVV. ALVEDE : : : V: :
116. pro GGFGRLSHDAEHFSFEGWYDNRPRSFMYVTPCRTAVVYALVEDEVEVEVEPVAG

Fig.7.



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Fig.8 (Cont).

[illegible]

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Fig.9.

ATGGACAAGGATATGTATGACTTCATGGCTCTTGACAGACCATCTACTCCTCTCATAGATCGTGGAGTAGCATTGCACAAAATGATCAGGCTTATTACCA
TACCTGTTCTATACATACTGAAGTACCGAGAAGCTGTCTGGTAGATGAGGAGAGTATCTAGCACCTCATCGTAACGTGTTTTACTAGTCCGAATAATGGT 100

M D K D M Y D F M A L D R P S T P L I D R G V A L H K M I R L I T

TGGGATTAGGCGGAGAAGGATATTTGAATTTTATGGGAAATGAATTTGGACACCCCGAGTGGATTGATTTTCCAAGAGGTGATCTACATCTTCCAGTGG
ACCCTAATCCGCTCTTCTATAAACTTAAATACCCCTTACTTAAACCTGTGGGGCTCACCTAACTAAAAGGTCTCCACTAGATGTAGAAGGGTCACC 200

M G L G G E G Y L N F M G N E F G H P E W I D F P R G D L H L P S G

TAAATTTGTTCTGGGAACAATTACAGTTATGATAAATGCCGGCGTAGGTTTGATCTAGGCAATTCAAAGCGTCTGAGATATCATGAATGCAAGAGTTT
ATTTAAACAAGGACCCCTTGTTAATGTCAATACTATTTACGGCCGCATCCAACTAGATCCGTTAAGTTTTCGCAGACTCTATAGTACCTTACGTTCTCAA 300

K F V P G N N Y S Y D K C R R R F D L G N S K R L R Y H G M Q E F

GATCAAGCAATTCAGCATCTTGAAGAAGCCTATGGTTTCATGACTTCTGAGCACCAATACATATCACGGAAGGATGAAAGGGATCGGATCATTGTCTTCG
CTAGTTCGTTAAGTCGTAGAAGTCTTCTCGGATACCAAAGTACTGAAGACTCGTGTTATGTATAGTGCCTTCTACTTTCCCTAGCCTAGTAACAGAAGC 400

D Q A I O H L E E A Y G F M T S E H Q Y I S R K D E R D R I I V F

AGAGGGGAAACCTCGTTTTTGTATTCAATTTTCATTGGACTAGCAGCTATTCGGATTACCGAGTTGGCTGCTTAAAGCCAGGAAAGTACAAGATAGTCTT
TCTCCCTTTGGAGCAAAACATAAGTTAAAGTAACCTGATCGTCGATAAGCCTAATGGCTCAACCGACGAATTTCCGCTCTTTCATGTTCTATCAGAA 500

E R G N L V F V F N F H W T S S Y S D Y R V G C L K P G K Y K I V L

GGATTGATGATCCTTTGTTTGGAGGCTTTGGCAGGCTTAGTCATGATGCAGAGCACTTCAGCTTTGAAGGGTGGTACGATAACCGGCCCTCGATCCTTC
CCTAAGTCTACTAGGAAACAAACCTCCGAAACCGTCCGAATCAGTACTACGTCCTGGAAGTCGAAACTCCACCATGCTATTGGCCGGAGCTAGGAAG 600

D S D D P L F G G F G R L S H D A E H F S F E G W Y D N R P R S F

ATGGTGTACACACCATGTAGAACAGCAGTGGTCTATGCTTTAGTGGAGGATGAAGTGGAGAATGAAGTGGAACTGTGCGCGGTTAAGATATATCTTAGC
TACCACATGTGTGGTACATCTTGTGCTCACCAGATACGAAATCACCTCCTACTTCACCTCTTACTTCACCTTGGACAGCGGCAATTCATATAGAATCG 700

M V Y T P C R T A V V Y A L V E D E V E N E V E P V A G

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TTGTCCAAGACTTCGTCCTTACGGTAATAACTAGAAGGATACAGTAGACGCAACTTGCTTTATATAACTCGGATATTAACTACAGTGCCAGGAACGTC 800

ATTTCCATCCTGGTCTTGGTATTTTGTGTCATGATAACATAATCAAAGACCAATAGGAAACGAGGGTTACATGCTAGCTTCCATCATCATAGGGAG
TAAAGGTAGGACCAAGAACCATAAAACAACAGTACTATTTGTATTAGTTTCTGGTTATCCTTTGCGTCCCAATGTACGATCGAAGGTAGTAGTATCCCTC 900

Sac I

CTCAGACCTCCTAAACCATAAATCTTCAAGCTGCCTGCGTTCCGTTAGTATGTTATGTGGTACTTTGCAATCTTAAATTATCATGATCGCTGTGGATGCTA 1000

GAGTCTGGAGGATTGGTATTTAGAAGTTCGACGGACGCAAGCCATCATACAATACACCATGAACGTTAGAATTTAATAGTACTAGCGACACCTACGAT

ACTATGACAATTTTGTATATATGCCAACGAGGATTTTAAAGTTTTAAAAAACAACAAAAATCCATG 1069

TGATACTGTTAAACATATATACGGTTGCTCCTAAATTCAAATTTTTTTTTTTTGGTTTGGTAC

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Fig.10.

Cla I Kpn I

TATGGATTGACATCGATAATACGACTCACTATAGGGATTTTTTTTTTTTTTTTTTTTGTAGTTTTGGGTACCATGTCAAACTTTTTTGCACCTAGCA
ATACCTAACTGTAGCTATTATGCTGAGTGATATCCCTAAAAAAAAAAAAAAAAAACATCAAAACCCATGGTACAGTGTGAAAAACGTGGATCGT 100

S F G Y H V T N F F A P S

GCCGATTTGGAACCTCTGATGATTTGAAGTCTTTAATAGATAAAGCTCATGAGTTAGGGCTGCTTGTCTCATGGATATTGTTTCATAGCCATGCGTCAAA
CGGCTAAACCTTGAGGACTACTAACTTCAGAAATTATCTATTTGAGTACTCAATCCCGACGAACAAGAGTACCTATAACAAGTATCGGTACGCAGTTT 200

S R F G T P D D L K S L I D K A H E L G L L V L M D I V H S H A S N

TAATACGTTGGATGGGCTGAACATGTTTGATGGTACGGATAGTCACTACTCCACTCCGGATCAGGGGTCATCATTGGTTGTGGGACTCTCGCCTTTTC
ATTATGCAACCTACCCGACTTGTACAACTACCATGCCTATCAGTGATGAAGGTGAGGCCTAGTGCCCCAGTAGTAACCAACACCCGTGAGAGCGGAAAAAG 300

N T L D G L N M F D G T D S H Y F H S G S R G H H W L W D S R L F

AACTATGGAAGCTGGGAGGTGCTAAGATTTCTTTTCAAATGCAAGATGGTGGTTGGAAGAGTACAGGTTTGATGGTTTGTAGATTGATGGGGTCACTT
TTGATACCTTCGACCTCCACGATTCTAAAGAAGAAAGTTTACGTTCTACCACCAACCTTCTCATGTCCAACTACCAAACTCTAACTACCCCACTGAA 400

N Y G S W E V L R F L L S N A R W W L E E Y R F D G F R F D G V T

Nco I Sca I

CCATGATGTACACTCCCATGGGTGCGAGTAGCTTTTACTGGCAACTACAATGAGTACTTTGGATATGCAACTGATGTAGATGCTGTGATTTATTTGAT
GGTACTACATGTGAGGGGTACCCAACGTCCATCGAAAAATGACCGTTGATGTTACTCATGAACCTTATACGTTGACTACATCTACGACACTAAATAAACTA 500

S M H Y T P H G L O V A F T G N Y N E Y F G Y A T D V D A V I Y L M

GCTTGTGAATGATATGATTCACGGTCTTTTCCCTGAGGCTGTTACCATGGTGAAGATGTTAGCGGAAAGCCAACTTTTGCATTCCAGTGAAGATGGT
CGAACACTTACTATACTAAGTGCCAGAAAAGGACTCCGACAATGGTAACCACTTCTACAATCGCCTTTGCGTTGTAAACGTAAGGTACCTTCTACCA 600

L V N D M I H G L F P E A V T I G E D V S G K P T F C I P V E D G

GGTGTGGATTTGATTACCGTCTCCACATGGCCATTGCCGATAAATGGATTGAGATTCTTAAAGAAGAGAGATGAGGACTGGAAAAATGGGTGACATTGTGC
CCACAACCTAACTAATGGCAGAGGTGTACCGGTAAACGGCTATTACCTAACTCTAAGAATTCTTCTCTCTACTCCTGACCTTTTACCCACTGTAACACG 700

G V G F D Y R L H M A I A D K W I E I L K K R D E D W K M G D I V

ATACACTCACCAACAGAAGGTGGTTGGAATAATGTGTTGCTTATGCTGAAAGTCATGACCAAGCTCTTGTGTTGGTGACAAAACATTGTCATTTTGGCTGAT
TATGTGAGTGGTTGCTTCCACCAACCTTTTACACAACGAATACGACTTTCAGTACTGGTTCGAGAACAACCACTGTTTTGATAACGTAACCAACGACTA 800

H T L T N R R W L E K C V A Y A E S H D O A L V G D K T I A F W L M

Bcl I Nco I

GGACAAGGACATGTACGACTTCATGGCTCGTGACAGACCATCTACTCCTTATAGATCGTGGAATAGCATTGCACAAAATGATCAGGCTTATTACCATG
CCTGTTCTGTACATGCTGAAGTACCGAGCACTGTCTGGTAGATGAGGAGAATATCTAGCACCTTATCGTAACGTGTTTACTAGTCCGAATAATGGTAC 900

D K D H Y D F M A R D R P S T P L I D R G I A L H K M I R L I T M

GGCTTAGCGGAGAGGATATTTGAATTTTATGGGAAATGAATTTGGACATCCTGAGTGGATTGATTTTCCAAGAGGGGATCGACATCTGCCCAATGGTA
CCGAATCCGCCTCTTCTATAAACTTAAATACCTTTACTTAAACCTGTAGGACTACCTAACTAAAAGGTTCTCCCTAGCTGTAGACGGGTACCAT 1000

G L G G E G Y L N F M G N E F G H P E W I D F P R G D R H L P N G

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Fig.10 (Cont).

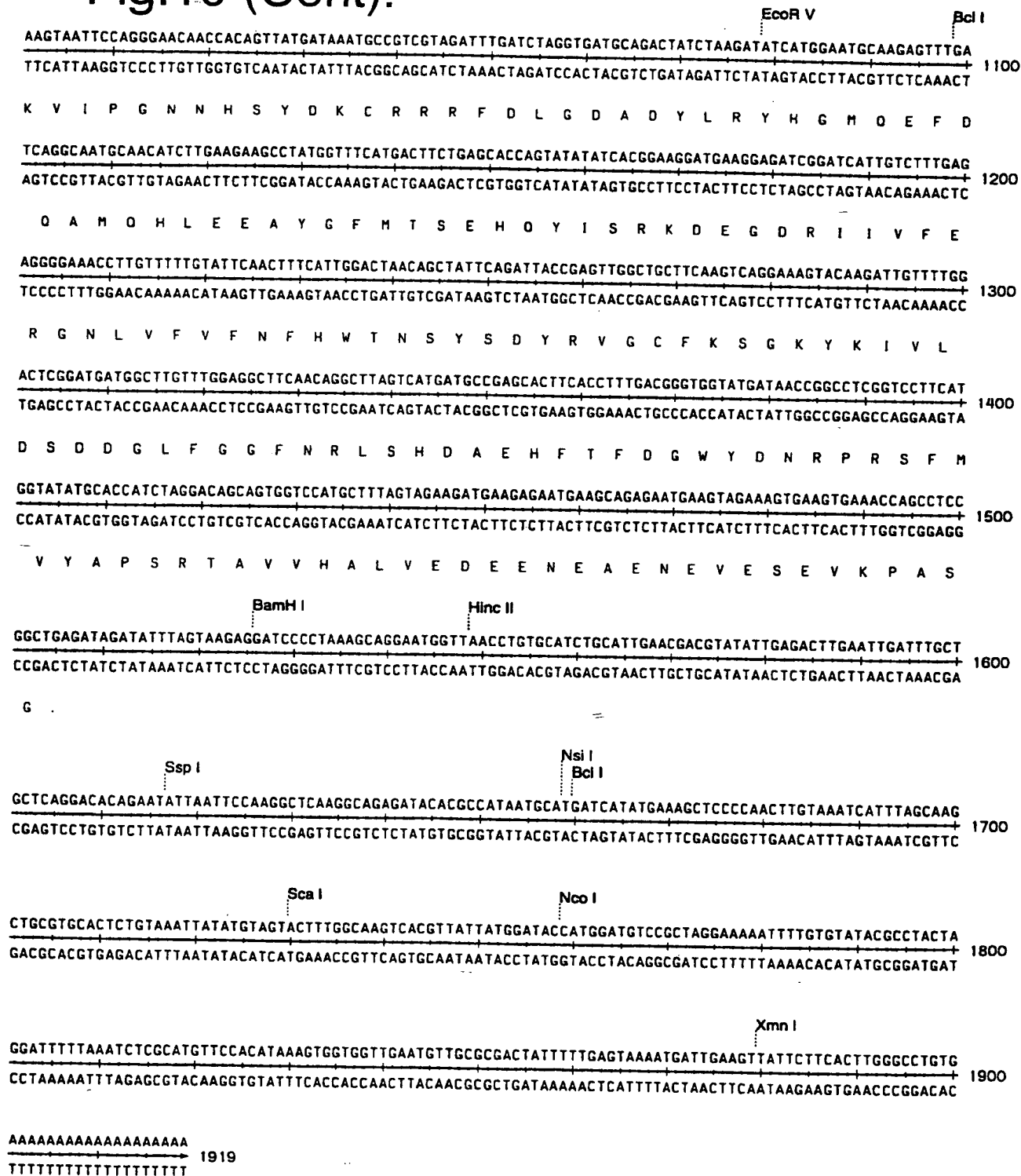


Fig.11.

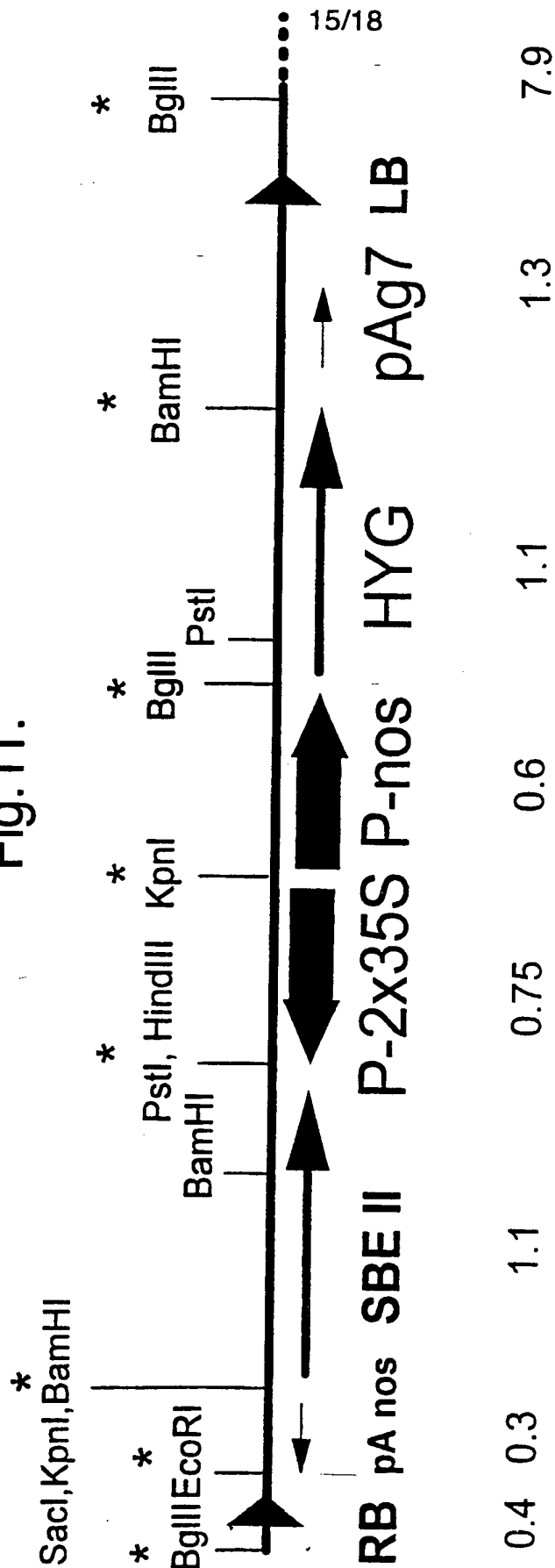
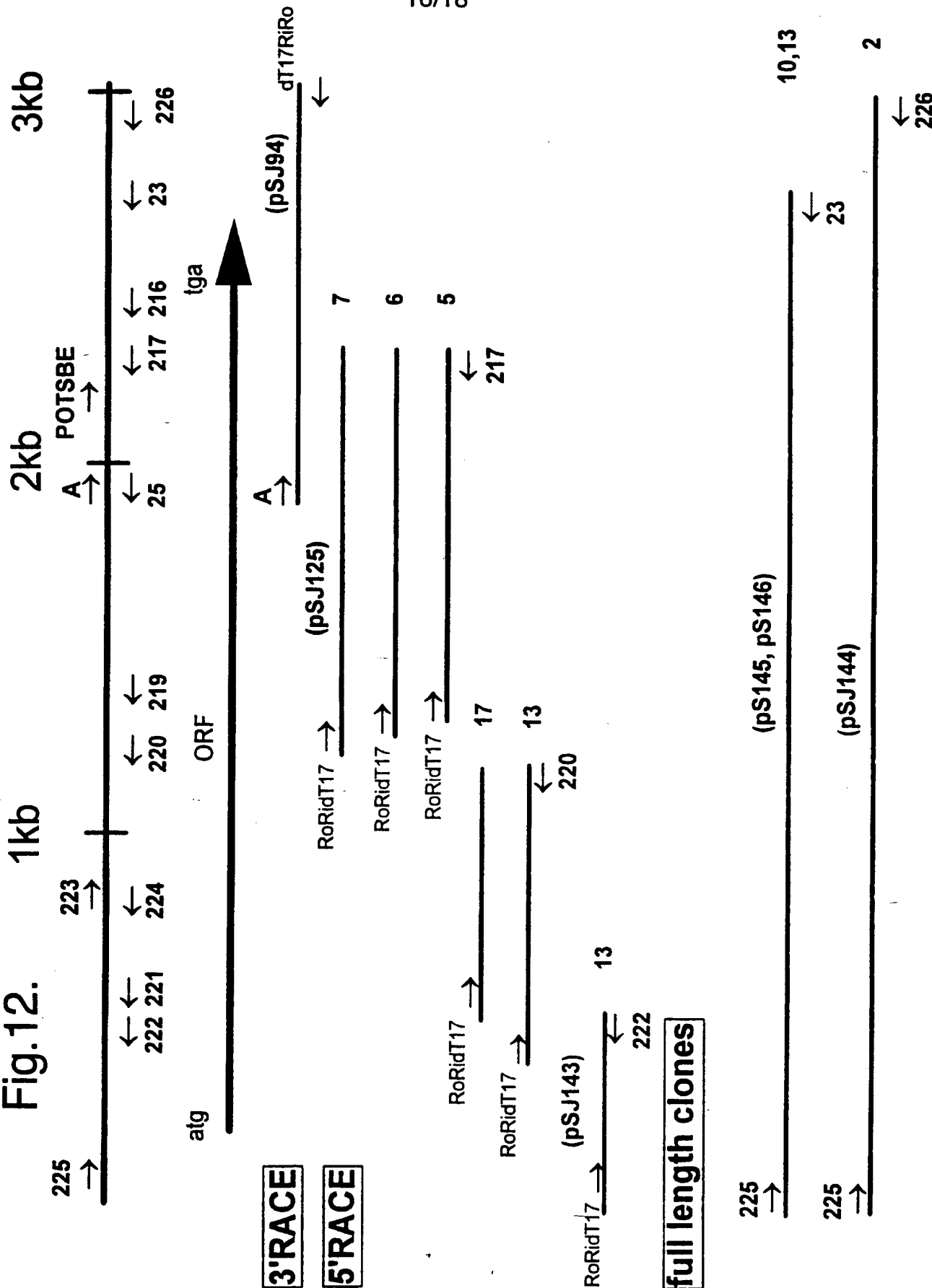
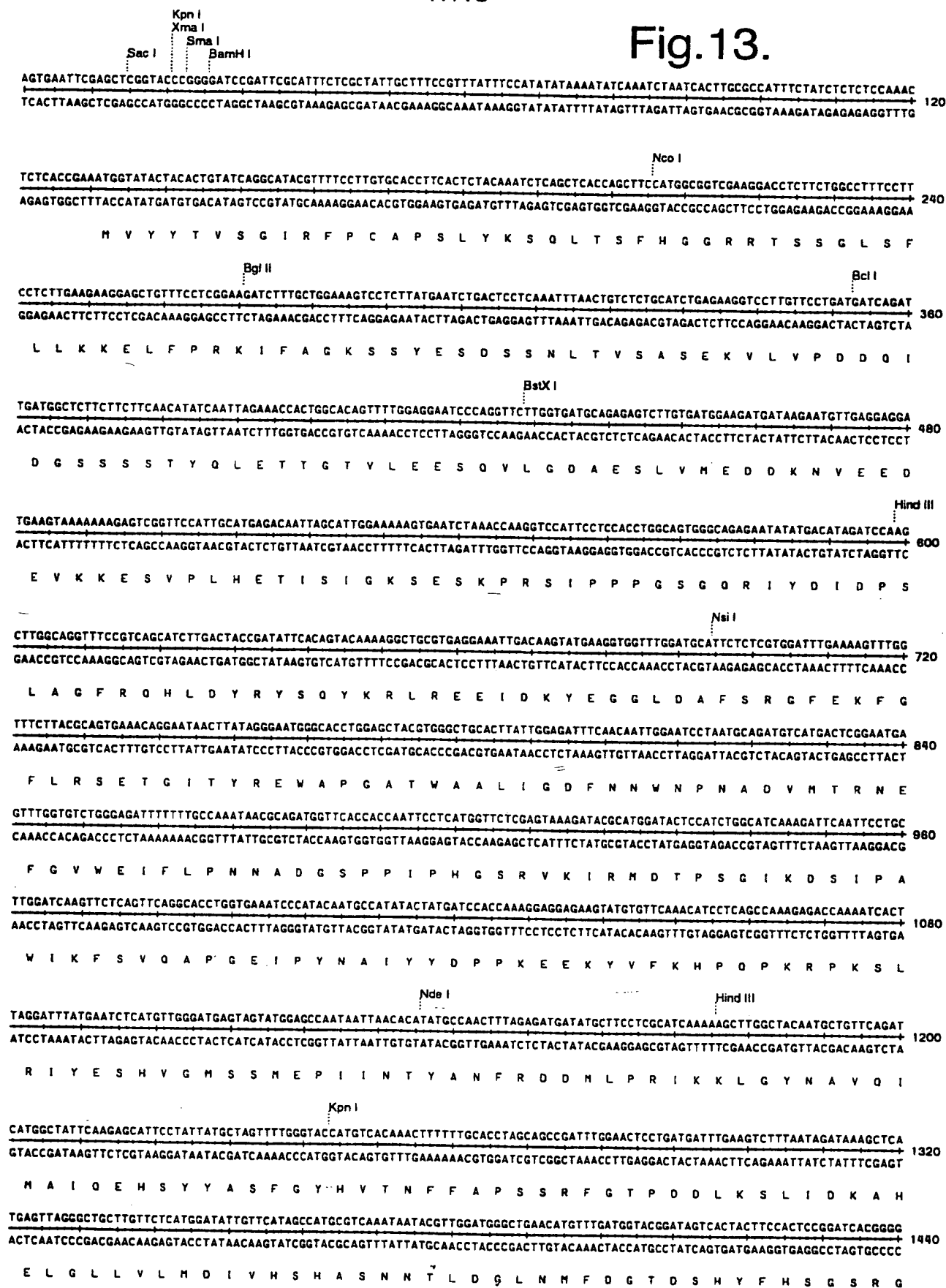


Fig.12.



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Fig.13.



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Fig.13 (Cont).

TCATCATTGGTTGTGGGACTCTCGCTTTTCAACTATGGAAGCTGGGAGGTGCTAAGATTCTCTTTCAAATGCAAGATGGTGGTTGGAAGAGTACAGGTTTGATGGTTTAGATTGA
AGTAGTAACCAACACCCTGAGAGCGGAAAAGTTGATACCTTCGACCCTCCAGGATTCTAAGAAGAAAAGTTACGTTCTACCACCAACCTTCTCATGTCCAACTACCAAACTCTAACT 1560

H H W L V D S R L F N Y G S W E V L R F L L S N A R W W L E E Y R F D G F R F D

Nco I Sca I
TGGGGTGAAGTTCATGATGTACACTCCCATGGGTTGCAGGTAGCTTTACTGGCACTACAATGAGTACTTTGGATATGCAACTGATGTAGATGCTGTGATTATTGATGCTTGTGAA
ACCCCACTGAAGGTACTACATGTGAGGGGTACCAACGCTCCATCGAAAATGACCGTTGATGTTACTCATGAACCTATACGTTGACTACATCTACGACACTAAATAAATACGAACACTT 1680

G V T S M H Y T P H G L Q V A F T G N Y N E Y F G Y A T D V D A V I Y L H L V N

TGATATGATTCACGGTCTTTTCCCTGAGGCTGTTACCATTGGTGAAGATGTTAGCGGAAAGCCAACTTTTCATTCCAGTGAAGATGGTGGTGGATTGATTACCGTCTCCACAT
ACTATACTAAGTCCGAGAAAAGGGACTCCGACAATGGTAACCACTTCTACAATCGCTTTCGGTTGTAACGTAAGGTACCTTCTACCACCACAACCTAACTAATGCCAGAGGTGTA 1800

D N I H G L F P E A V T I G E D V S G K P T F C I P V E D G G V G F D Y R L H M

GGCATTGGCGATAAATGATTGAGATTCTTAAGAAGAGAGATGAGGACTGGAAAATGGGTGACATTGTGCATACACTACCAACAGAAAGGTGGTTGGAAAATGTGTTGCTTATGCTGA
CCGGTAACGGCTATTACCTAACTCTAAGAATCTTCTCTACTCTGACCTTTTACCACGTGAACAGGTATGTGAGTGGTGTCTTCCACCAACCTTTTACACAACGAATACGACT 1920

A I A D K W I E I L K K R D E D W K M G D I V H T L T N R R W L E K C V A Y A E

AAGTCATGACCAAGCTCTTGTGGTGACAAAATCTTGCATTTTGGTGTGGAACAGGACATGTACGACTTCATGGCTCGTGACAGACCATCTACTCTCTTATAGATCGTGAATAGC
TTCAGTACTGGTTCGAGAACAACCACTGTTTTGATAACGTAAAAACCGACTACCTGTTCTGTACATGCTGAAGTACCGAGCACTGTCTGGTAGATGAGGACAATCTAGCACTTATCG 2040

S H D O A L V G D K T I A F W L M D K O N Y D F N A R D R P S T P L I D R G I A

Bcl I Nco I
ATTGCACAAAATGATCAGGCTTATTACCATGGGCTTAGCGGAGAGGATATTTGAATTTTATGGGAAATGAATTTGGACATCCTGAGTGGATTGATTTTCAAGAGGGCATCGACATCT
TAACGTGTTTTACTAGTCCGAATAATGGTACCGAATCCGCTCTTCTATAAACTTAAATACCTTTACTTAAACCTGTAGGACTCACCTAACTAAAGGTCTCCCTAGCTGTAGA 2160

L H K M I R L I T H G L G G E G Y L N F M G N E F G H P E W I D F P R G D R H L

Bcl I
GCCAATGGTAAAGTAATTCAGGGAACAACCAAGTATGATAAATGCCGTCGTAGATTGATCTAGGTGATGACACTATCTAAGATATCATGGAATGCAAGAGTTTGATCAGGCAAT
CGGGTACCATTTTCATTAAGGTCCCTGTGGTGCAATACTATTACGGCAGCATCTAACTAGATCCACTACGCTGTAGATTCTATAGTACCTTACGTTCTCAAACTAGTCCGTTA 2280

P N G K V I P G N N H S Y D K C R R R F D L G D A D Y L R Y H G M Q E F D O A M

GCAACATCTTGAAGAAGCCTATGGTTTCATGACTTCTGAGCACCAGTATATATACCGGAAGGATGAAGGAGATCGGATCATTTGCTTTGAGAGGGGAAACCTGTTTTGTATTCAACTT
CGTTGTAGAACTTCTTCGGATACCAAGTACTGAAGACTCGTGGTCATATATAGTGCTTCTTACTCTAGCTAGTAAACAGAACTCTCCCTTTGGAACAAAACATAAGTTGAA 2400

O H L E E A Y G F M T S E H O Y I S R K D E G D R I I V F E R G N L V F V F N F

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H W T N S Y S D Y R V G C F K S G K Y K I V L D S D D G L F G G F N R L S H D A

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GCTCGTGAAGTGGAACCTGCCACCATATATTGGCCGAGCCAGGAAGTACCATATACGTGGTAGATCCTGTGCTCACCAGATACGAAATCATCTTCTACTTCTCTTACTGCTCTCT 2640

E H F T F D G W Y D N R P R S F M Y Y A P S R T A V V Y A L V E D E E N E A E N

BamH I Hinc II
TGAAGTAGAAAGTGAAGTGAACACGCTCCGGCTGAGATAGATATTTAGTAAGAGGATCCCTTAAAGCAGGAATGGTTAACCTGTGCATCTGCATTGAACGACGTATTTGAGACTGGA
ACTTCATCTTTCACTTCACTTTGGTGGAGGCGGACTCTATCTATAAATCATCTCTAGGGGATTTGCTCTTACCAATTGGACACGTAGACGTAACCTGCTGCATATAACTCTGACCT 2760

E V E S E V K P A S G

Nde I Xba I Sal I Hinc II Pst I
AATCCATATGACTAGTAGATCTCTAGAGTGCACCTGCAGGCATG 2805
TTAGGTACTGATCATCTAGGAGATCTCAGCTGGACGTCCGTAC

09297703 071999